Patent claims

1. Process for the removal of hydrogen sulfide and other sour gas components from industrial gases under pressure by means of a physical scrubbing agent and for the recovery of sulfur from hydrogen sulfide using a Claus plant, **characterized in that**:
   - the hydrogen sulfide and the other sour gas components are absorptively dissolved in a physically acting scrubbing agent,
   - the physical scrubbing agent undergoes a multi-step regeneration (6),
   - the multi-step regeneration unit is equipped with at least one device each for CO enrichment (7), H_2S enrichment (8), CO_2 stripping (9) and thermal regeneration (10),
   - whereby the various regeneration steps operate at pressure levels that differ from each other and are lower than that of the absorption unit,
   - a Claus gas rich in hydrogen sulfide is withdrawn from one of the regeneration steps and fed to a Claus plant (14) which produces sulfur (15),
   - the tail gas leaving the Claus plant undergoes hydration and is compressed to a pressure that corresponds to one of the regeneration stages, and
   - the compressed tail gas is introduced into the device that is used for the CO enrichment (7).

2. Process according to Claim 1, **characterized in that** the device for CO enrichment (7) is realized in the form of a flash column.

3. Process according to either of claims 1 or 2, **characterized in that** a process implemented as physical absorption is based on the Rectisol, Selexol or Morphysorb process.